INTRODUCTION

Under the TES X Contract (68-W9-0007), Metcalf & Eddy, Inc. (M&E) has been tasked by the United States Environmental Protection Agency (U.S. EPA) Region V to perform technical review of the Revised Supplemental RCRA Facility Investigation (RFI) report prepared by RMI Sodium (RMI). The RMI Sodium plant is located in Ashtabula, Ohio and produces sodium and chlorine by the electrolysis of sodium chloride.

RMI's production process generates three types of hazardous waste: cell bath waste contaminated with heavy metals; a reactive sodium/calcium sludge; and waste sulfuric acid. On March 31, 1987, the U.S. EPA issued RMI a final Resource Conservation and Recovery Act (RCRA) Part B permit for storage of cell bath waste in an enclosed waste pile, and for burning the reactive waste in an incinerator. The waste sulfuric acid is neutralized on-site in a RCRA-exempt treatment process.

On June 11, 1987, RMI submitted the RFI Work Plan as required by their Part B permit under Section 3004(u) of the Hazardous and Solid Waste Amendments of 1984 (HSWA). The permit required the facility to conduct an RFI to determine the nature and extent of releases of hazardous constituents from Solid Waste Management Units (SWMUs) at the RMI facility. The RFI was required because there had been a release of solvents to the groundwater in the vicinity of the closed landfill at the facility.

The U.S. EPA Region V approved the RFI Work Plan, with conditions, on March 30, 1988. RMI submitted the RFI report to the U.S. EPA in May 1989. M&E submitted technical review comments on the RFI report to the U.S. EPA on February 6, 1990. On May 9, 1990, a meeting was held between the U.S. EPA, M&E, RMI Sodium, and their consultant (ECKENFELDER, Inc.) to discuss each of the review comments. RMI Sodium submitted written responses to each comment to the U.S. EPA on June 11, 1990. M&E comments on these responses were submitted to the U.S. EPA on July 18, 1990. On July 13, 1990, M&E received a copy of RMI Sodium's revised RFI report and Draft CMS (partial submittal), with instruction from the U.S. EPA Work Assignment Manager (WAM), Ms. Francine Norling, to provide review comments on the RFI report and Section 1 of the Draft CMS. These comments were submitted to the U.S. EPA on August 17, 1990. In late October 1990, M&E received a Work Plan for Supplemental RFI activities proposed at the site. M&E submitted comments on this RFI Work Plan on November 2, 1990. On May 9, 1991, M&E received the Supplemental RFI Report for review. The Supplemental RFI Report summarized field activities conducted in late February - early March 1991 and provided conclusions based on this additional information. M&E submitted review comments on this document on June 7, 1991. M&E received the Revised Supplemental RFI Report for review on August 8, 1991, in which review comments were to be incorporated. The following review comments are specific to this document. Please note that the comments are listed in the same order as subject sections are encountered in the text. Sections or subsections for which there are no comments are not listed.

SUPPLEMENTAL RFI REPORT COMMENTS

Section 2.4, Page 2-5, Paragraph 1: Please state how soon after collection the surface water samples were preserved. It is stated in the response to comments in Appendix D but not here in the text.

Section 4.3.1, Page 4-13, Paragraph 2: It should be noted that the ODNR publication referenced in the text gives metals concentrations for oilfield brines. The depth to the Chagrin Shale is much greater in southern Ohio than at the RMI site. Therefore, because the concentrations of most metals increases with depth, it would be probable that the range of barium concentrations in the Chagrin Shale cited for southern Ohio would be greater than at the site. The context in which the information reported in the ODNR publication should be used is that although the barium concentrations for the Chagrin Shale in southern Ohio cannot be directly compared to the values on-site because of the depth differences, the values reported show that barium concentrations in groundwater from shale are much higher than groundwater from other aquifer types (i.e. sandstone, sand and gravel, clayey till, etc.). Therefore, without having groundwater data for the Chagrin Shale near the site, it is likely that the barium is naturally occurring and that water quality in the site bedrock groundwater is not probably affected by on-site SWMU's.

Section 4.3.1, Page 4-13, Paragraph 3: There is not enough evidence to conclude that the cadmium in groundwater in the vicinity of the ponds is related to leaching from fill areas near the ponds and not to the pond water. After the conference call between the U.S. EPA, Metcalf & Eddy, ECKENFELDER, and RMI Sodium representatives in July 1991, the U.S. EPA was notified that RMI stopped using cadmium in the production process after the initial RFI field work was completed (including the first round of groundwater sampling). It is interesting to note that cadmium levels in groundwater decreased in direct correlation to the removal of cadmium from RMI's waste stream. Also, even if the pond water is not the direct source of cadmium in the shallow groundwater, the ponds could be indirectly affecting the shallow groundwater by pond water leaching cadmium from fill and soil underlying the ponds directly to the groundwater. Therefore, it may not be valid to state that the decrease in cadmium concentrations in the shallow groundwater is not necessarily related to pond water. The decrease in cadmium may be a result of a combination of all factors mentioned in this comment and in the report.

Section 4.3.1, General Comment: Although ECKENFELDER personnel did not report that a sheen was observed on purged groundwater during supplemental RFI sampling, it should be noted somewhere in this section that an apparent sheen was observed on purged water by an M&E oversight representative. A discussion should be provided on the source of this observation.

Section 6.0, Page 6-1, Paragraph 2: The U.S. EPA notified the RMI representative that the classification of the shallow groundwater as a Class IIIA per the document "Guidelines for Groundwater Classification under the EPA Groundwater Protection Strategy" could not be used as the basis for not comparing barium and cadmium concentrations to agency proposed action levels. The document was not intended to be used for that purpose. Either the comparison to action levels should be conducted or other valid reasoning should be provided for not making the comparison.

Section 7.0, Page 7-2, 5th Bullet: Please see previous comment for Section 6.0, Page 6-1, Paragraph 2.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: AUG 15 1991

SUBJECT: Technical Assistance for the RMI - Sodium Plant RCRA Facility Investigation (RFI)

FROM: Francine Norling, Ohio Permits Section (5HR-13) Francine Norling

TO: Ron Wilhelm, Environmental Research Laboratory, Athens, Georgia

At our conference call of August 14, 1991, Bob Ambrose suggested that I forward the enclosed documents to you. Your office has offered to evaluate the facility's conclusions regarding the significance of the potential for intermedia transfer of inorganic groundwater contamination to on-site surface water ditches. We are concerned about this potential route of contaminant migration because the facility is in the watershed of Fieldsbrook, a brook with sediment contamination that has been designated a Superfund site. The brook discharges to the Ashtabula River, and then Lake Erie, and this area has also been designated a Great Lakes Area of Concern.

The facility reached its conclusions with simple calculations using Darcy's Law. These calculations can be found in Section 4.2.2 of the RFI report. I would like your evaluation as to whether these calculations are sufficient, or whether other models are used by U.S.EPA for this purpose. Also, the facility did not attempt to calculate specific concentrations of constituents that could migrate from groundwater to a surface water body. The report simply states that the contribution of groundwater to surface water is expected to be minimal.

The most recent summary of groundwater monitoring data can be found in the report titled "Supplemental Investigation Report."

You will note that a DNAPL has also been detected at the facility. Based on our knowledge of waste management practices at RMI and its neighboring facility, we believe the DNAPL is originating from the neighboring facility. Remediation of the DNAPL will therefore be handled under other authorities.

If you have any questions, please contact me at FTS 886-6198. I discussed a due date with Bob Ambrose, and we agreed that mid to late September would be acceptable for completion of this task. I will also be sending a formal letter to formally activate this project shortly.

ECKENFELDER INC.

August 13, 1991 6120

Mr. Richard L. Mason
Director of Environmental Affairs
RMI Titanium Company
1000 Warren Avenue
Niles, OH 44446

Dear Rick:

Attached is a copy of the laboratory results for the soil sample collected on the landfill (Area A) at the RMI Sodium Plant, on September 13, 1990. The sample was collected near the southeastern corner of the landfill where some orange colored leachate was observed emanating from the landfill. The soil sample was analyzed for the 13 priority pollutant metals, iron, and manganese.

A summary of surficial soils metals data for the entire RMI Sodium site is located on Table 6-2 of the RCRA Facility Investigation (RFI) Report (June 1990). A comparison of these data with the September 1990 soil sample results can be made for eight metals including arsenic, cadmium, chromium, lead, mercury, nickel, selenium, and silver. For all eight metals, the September 1990 soil concentrations were less than the average metals concentrations for background and the landfill cap (Area A). In addition, the concentrations of antimony, beryllium, copper, thallium, and zinc in the September 1990 sample were less than those in surficial soil sample SS5-2 of the RFI. The RFI did not include iron and manganese analyses and, therefore, a comparison with the September 1990 sample can not be made.

If you have any questions or comments concerning this matter, please do not hesitate to call.

Sincerely,

ECKENFELDER INC.

William M. Liebe, P.G.
Senior Hydrogeologist

cc: Jeffrey L. Pintenich, P.E.
Laura A. Mahoney

227 French Landing Drive
Nashville, Tennessee 37228
615.255.2288
FAX 615.256.8332

ECKENFELDER INC.

CLIENT: RMI COMPANY #6120
DATE RECEIVED: 9/14/90
DATE REPORTED: 10/11/90

ECKENFELDER SAMPLE DESCRIPTION	6833
CLIENT SAMPLE DESCRIPTION	
	9/13
PRIORITY POLLUTANT METALS	DETECTION LIMITS	CONC
ANTIMONY	10.0	BMDL
ARSENIC	0.25	10.2
BERYLLIUM	0.25	0.25
CADMIUM	0.25	BMDL
CHROMIUM	2.5	10.7
COPPER	1.0	14.2
LEAD	5.0	13.5
IRON	1.5	19,900
MANGANESE	0.50	492
MERCURY	0.2	BMDL
NICKEL	1.0	14.0
SELENIUM	0.25	BMDL
SILVER	0.50	BMDL
THALLIUM	5.0	BMDL
ZINC	0.25	53.8

ALL RESULTS EXPRESSED IN MILLIGRAMS/KILOGRAM (WET)
UNLESS OTHERWISE NOTED.

BMDL = BELOW METHOD DETECTION LIMIT
NR = NOT REQUESTED
NA = NOT APPLICABLE

ECKENFELDER INC.

D. Rick Davis

D. RICK DAVIS
VICE PRESIDENT/ANALYTICAL & TESTING SERVICES

227 French Landing Drive
Nashville, Tennessee 37228
615.255.2288
FAX 615.256.83[illegible]

RMI TITANIUM Company

P. O. BOX 269
1000 WARREN AVENUE
NILES, OHIO 44446
FAX 216/544-7796

May 2, 1991

EXPRESS MAIL

Ms. Francine Norling
Environmental Scientist
RCRA Permitting Branch
U. S. EPA, Region V
230 South Dearborn Street
Chicago, Illinois 60604

Subject: RCRA Facility Investigation
Supplemental Investigation Report
RMI - Sodium Plant OHD 000 810 242

Dear Ms. Norling:

Enclosed are two copies of the subject report. As I have discussed with you, the acid tank integrity test has been postponed.

Since the acid tanks will have to be emptied and cleaned for the integrity inpsection, RMI plans to use the opportunity to install tank liners. The integrity test will be conducted as soon as liners are procured.

As stated in the U. S. EPA letter to RMI of April 4, 1990, a Corrective Measures Study is required for certain areas of the Facility. Plans to develop a CMS are underway and RMI believes they need not be delayed by the unfinished acid tank integrity test.

If you have any questions or would like to discuss the submittal, please contact me at (216) 544-7688.

Sincerely,

Richard L. Mason
Director
Environmental Affairs

Enclosures

TESX-MOS-151019-RP-0005

Metcalf & Eddy

April 1/, 1991

Ms. Francine Norling
U.S. EPA, Region V
5HR-13
230 South Dearborn Street
Chicago, IL 60604

RE: RFI Field Work Summary
RMI Sodium Plant
Work Assignment No. R05019

Dear Francine:

This letter summarizes all RFI field work activities conducted at RMI Sodium from February 25 through March 2, 1991. This letter is a revision of the March 8, 1991 cover letter which transmitted the field notes and photographs. All field activities were conducted in accordance with both accepted protocol and the Supplemental RFI Work Plan.

Field activities included the installation of three monitoring wells (MW-12S, MW-13S, and MW-8SR) and three piezometers (PZ-21, PZ-22, and PZ-23); the collection of water levels from all wells (except MW-1S and MW-2S), piezometers, and stream gauges, and the collection of surface water, sediment, and groundwater samples (from all wells except MW-1S and MW-2S). All monitoring wells (except MW-1S and MW-2S) were sampled for total metals, cyanides, and "dissolved" metals. The wells were sampled after purging a minimum of three well volumes or until "dryness". The wells purged to "dryness" were sampled as soon as sufficient water recovered. The surface water and sediment samples were collected by Mr. Bill Liebe, Eckenfelder, on Tuesday, February 26, 1991; groundwater sampling was performed by Mr. Clarance Cothran, Eckenfelder, on Thursday, February 28 through Saturday, March 2, 1991.

Both M&E and Eckenfelder field personnel noted that groundwater purged from all sampled shallow and deep wells exhibited a sheen on the surface. At the time of sampling, no source for the sheen could be determined. Possible sources of the sheen include either subsurface bacterial activity in the groundwater or organic constituents of an unknown origin. Of these two options, M&E believes that bacterial activity may be more likely. A sheen from bacterial activity is often exhibited in standing water where natural organic material (ex. decaying plant material) is common such as swamps and stagnant water puddles. Because of their depositional environments, both shale bedrock and clayey till deposits, such as those underlying the site, typically contain higher amounts of natural organic material relative to other types of bedrock and unconsolidated deposits. It is not likely that the sheen is associated with the DNAPL present in wells MW-1S and MW-2S because DNAPL is heavier than water. To help determine the possible source of the sheen, M&E suggests that one

2800 Corporate Exchange Drive, Suite 250, Columbus, OH 43231
Telephone: 614 890-5501—FAX: 614 890-7421

monitoring well could be sampled and analyzed for both TCL parameters and bacterial content. If this sample tests positive for any TCL parameter, then all wells on-site could be resampled for TCL constituents.

During the sampling of well MW-12S, the groundwater samples reacted with the preservatives in the sample bottle for cyanide and both total and dissolved metals analysis. The filtered sample for dissolved metals analysis was initially clear but turned to a dark brownish-green color upon contact with the nitric acid preservative. The samples for total metals and cyanide analysis exhibited the same color change after contact with nitric acid and sodium hydroxide preservatives, respectively, as well as the formation of a dark greenish-brown precipitate. Well MW-12S is located near the large coal pile just east of the site. It is possible that the coal pile is impacting the groundwater in its vicinity. The low pH measured at MW-12S (approximately 4.3 to 4.4) may be indicative of coal pile runoff leaching into the groundwater (just as acid mine drainage lowers pH of waters). The precipitate in the total metal samples may result from groundwater at MW-12S being saturated with metals so when the pH is further lowered to below 2 during preservation, these metal complexes precipitate out. Conversely, raising the pH of acidic water above 12 during preservation for cyanide analysis will result in metal complexes in solution to also precipitate out. These two scenarios likely explain the precipitate formation during sample preservation. To test whether the coal pile is affecting groundwater, well MW-12S can be sampled for polyaromatic hydrocarbons (PAHs). If PAH concentrations are relatively elevated, it likely indicates that the coal pile is affecting groundwater because PAHs are associated with coal.

All piezometers which could be found were abandoned by Penn Drilling on February 28 through March 2, 1991. Approximately six piezometers which were installed at the facility could not be located. All piezometers were abandoned by pulling out the piezometer, overdrilling the hole, and grouting the reamed hole to the surface.

The photolog which was sent to you in March 1991 shows specific activities conducted during the RFI field work at the RMI Sodium Facility.

Please call me at (614) 890-5501 if you have any questions or comments, or if I can be of further help.

Sincerely,

Rob Lowry

Rob Lowry
Contractor Project Manager

RL:jfk

cc: T. Aebie - M&E
T. Lentzen - TES X RPMO
TES X Files

Metcalf & Eddy

March 8, 1991

Ms. Francine Norling
U.S. EPA, Region V
5HR-13
230 South Dearborn Street
Chicago, IL 60604

RE: Field Notes; RFI Field Work
RMI Sodium Plant
Work Assignment No. R05019

Dear Francine:

Enclosed please find a copy of the field notes and photographs taken during the RFI field work conducted at RMI Sodium from February 25 through March 2, 1991. All field activities were conducted in accordance with both accepted protocol and the Supplemental RFI Work Plan.

Field activities included the installation of three monitoring wells (MW-12S, MW-13S, and MW-8SR) and three piezometers (PZ-21, PZ-22, and PZ-23); the collection of water levels from all wells (except MW-1S and MW-2S), piezometers, and stream gauges (see Appendix 1), and the collection of surface water, sediment, and groundwater samples (from all wells except MW-1S and MW-2S). All monitoring wells (except MW-1S and MW-2S) were sampled for total metals, cyanides, and "dissolved" metals. The wells were sampled after purging a minimum of three well volumes or until "dryness." The wells purged to "dryness" were sampled as soon as sufficient water recovered. The surface water and sediment samples were collected by Mr. Bill Liebe, Eckenfelder, on Tuesday, February 26, 1991, groundwater sampling was performed by Mr. Clarance Cothran, Eckenfelder, on Thursday, February 28 through Saturday, March 2, 1991.

All piezometers which could be found were abandoned by Penn Drilling on February 28 through March 2, 1991. Approximately six piezometers at the facility could not be located. All piezometers were abandoned by pulling out the piezometer, overdrilling the hole, and grouting the reamed hole to the surface.

2800 Corporate Exchange Drive, Suite 250, Columbus, OH 43231
Telephone: 614 890-5501—FAX: 614 890-7421

AWT Affiliates of Air & Water Technologies Corporation

The attached photolog shows specific activities conducted during the RFI field work at the RMI Sodium Facility.

Please call me at (614) 890-5501 if you have any questions or comments or if I can be of further help.

Sincerely,

Rob Lowry

Rob Lowry
Contractor Project Manager

RL/klr

cc: T. Aebie - M&E
T. Lentzen - TES X RPMO
TES X Files

CERTIFIED MAIL: P707 061 613
RETURN RECEIPT REQUESTED

FEB 19 1991

5HR-13

Richard L. Mason, Director
Environmental Affairs
RMI Titanium Company
P.O. Box 269
1000 Warren Avenue
Niles, Ohio 44446

RE: RCRA Facility Investigation (RFI)
Supplemental Workplan Approval
RMI Titanium Company - Sodium Plant
OHD 000 810 242

Dear Mr. Mason:

Thank you for your submittal of the revised Supplemental RFI Workplan, dated January 1991, for the RMI Titanium Company - Sodium Plant. The revised workplan was submitted in response to the United States Environmental Protection Agency's (U.S. EPA's) December 11, 1990, comment letter on the Supplemental RFI Workplan which was submitted in October 1990.

This letter is a written approval of the revised Supplemental RFI Workplan, provided that the enclosed approval conditions are met. You are required to begin implementation of the workplan, subject to the enclosed conditions, within 15 days of receipt of this letter.

Please contact Francine P. Norling of my staff, at (312) 886-6198, if you have any questions on this matter.

Sincerely,

ORIGINAL SIGNED BY/.
RICHARD TRAUB

Karl E. Bremer, Chief
RCRA Permitting Branch

Enclosure

cc: Ed Lim, OEPA-CO

P 707 061 613

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to RICHARD L. MASON, DIRECTOR	
Street and No. 1000 WARREN AVENUE	
P.O., State and ZIP Code NILES, OHIO 44446	
Postage	$ .57
Certified Fee	.10
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	.10
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$ .77
Postmark or Date	

PS Form 3800, June 1985

SHIP-13-TCK-OHIO SECTION - FRANCINE NOVELINO

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:	4. Article Number
RICHARD L. MASON, DIRECTOR ENVIRONMENTAL AFFAIRS RMI TITANIUM COMPANY P.O. BOX 269 1000 WARREN AVENUE NILES, OHIO 44446	P707061613 Type of Service: ☐ Registered ☐ Insured ☒ Certified ☐ COD ☐ Express Mail ☐ Return Receipt for Merchandise Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature – Addressee X	8. Addressee's Address *(ONLY if requested and fee paid)*
6. Signature – Agent X [signature]	
7. Date of Delivery 2/21/91	

PS Form 3811, Apr. 1989 ★U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT

RMI TITANIUM COMPANY
SODIUM PLANT
RFI SUPPLEMENTAL WORKPLAN
APPROVAL CONDITIONS

Section 2.3.3, Page 2-2:

As stated by RMI in the January 23, 1991, letter to the U.S. EPA, compressed air will not be used to develop the monitoring wells.

Section 2.3.5, Page 2-3:

This section states that groundwater samples will be analyzed for dissolved (filtered) metals, in response to the U.S. EPA's comment letter, dated December 11, 1990. That comment letter did not explain the U.S. EPA's most recent position on filtration of groundwater samples, and therefore RMI was not given complete instructions for groundwater sampling procedures.

Within the last 2 years, the U.S. EPA's Groundwater Task Force has proposed requiring unfiltered groundwater samples for metals' analyses at RCRA facilities. The Task Force has concluded that some mobile metals' species are likely to be removed by field filtration, especially colloidal particles. Therefore, field filtered samples may not give accurate information on mobile metals' concentrations. This position has also been supported by the Regional Superfund Groundwater Forum (see Groundwater Sampling for Metals Analyses, R. Puls and M. Barcelona, March 1989, EPA/540/4-89/001). As a result, the U.S. EPA is currently developing new RCRA groundwater monitoring rules and revisions to SW-846 to be proposed in the Federal Register that will most likely recommend the use of unfiltered samples for groundwater monitoring at RCRA facilities.

The U.S. EPA recognizes that certain well construction, development or sampling techniques may severely alter ambient subsurface conditions such that an unfiltered sample would produce artificially high metals' concentrations. Therefore, both unfiltered and filtered samples should be analyzed to help determine if such disturbances are occurring. It is also recommended that total suspended solids be measured. Of course, care should be taken during sampling to minimize turbidity.

The original 1988 approved RFI Workplan for RMI's Sodium Plant included the collection of field filtered groundwater samples. This information can still be used and compared to newly collected filtered samples to help determine trends over time in groundwater quality at the facility. However, in order to satisfy the latest U.S. EPA recommendations on groundwater sampling and to allow completion of the Corrective Measures Study, unfiltered samples should be collected and analyzed for metals from all wells to be sampled under the Supplemental RFI Workplan.

Section 2.4:

The piezometer abandonment procedures will be documented and described in detail in the Supplemental RFI Report.

RMI-Approval Conditions (continued)

Section 2.5:

The U.S. EPA may require RMI to discuss or revise sections of the CMS report, prior to completion of the Supplemental RFI, if such sections will not be significantly altered by the supplemental investigation.

Section 9.3, Page 9-5

All wastes generated as a result of RFI work will be disposed of in accordance with applicable RCRA and Ohio EPA solid and hazardous waste disposal requirements. The Supplemental RFI report will document waste disposal procedures used for RFI-generated wastes.

| OFFICIAL FILE COPY - CONCURRENCES |

CONCURRENCE REQUESTED FROM RPB			
OTHER STAFF	RPB STAFF	RPB SECTION CHIEF	RPB BRANCH CHIEF
02/12/91	2/13/91	2-13-91	KEB 2/15/91

5HR-13

DEC 11 1990

CERTIFIED MAIL: P707 061 601
RETURN RECEIPT REQUESTED

Richard L. Mason, Director
Environmental Affairs
RMI Titanium Company
P.O. Box 269
1000 Warren Avenue
Niles, Ohio 44446

RE: RCRA Facility Investigation (RFI)
Supplemental Workplan
RMI Titanium Company - Sodium Plant
OHD 000 810 242

Dear Mr. Mason:

Thank you for your submittal of the Supplemental RFI Workplan, dated October 10, 1990, for the RMI Titanium Company - Sodium Plant. This letter is to notify you that we have completed a review of this workplan and that we are transmitting our comments on the workplan, as described in the enclosure to this letter.

A revised workplan incorporating responses to the enclosed comments is due within 45 days of receipt of this letter. Please submit two copies of the revised workplan to the following addresses:

RCRA Activities
U.S. EPA - Region V
5HR-13-JCK
230 South Dearborn St.
Chicago, Illinois 60690-3587

Ohio EPA
Division of Solid and Hazardous
Waste Management
1800 WaterMark Drive
P.O. Box 1049
Columbus, Ohio 43266-0149

If you have any questions, or would like to meet to discuss these comments, please contact Francine P. Norling of my staff, at (312) 886-6198.

Sincerely,
Karl E. Bremer, Chief
RCRA Permitting Branch
ORIGINAL SIGNED BY/
KARL E. BREMER
Enclosure
cc: Ed Lim, OEPA-CO
5HR-JCK-13\NORLING\bsd\6-6198\Norling\RMIRFI\December 5, 1990

CONCURRENCE REQUESTED FROM RPB			
OTHER STAFF	RPB STAFF	RPB SECTION CHIEF	RPB BRANCH CHIEF
12/05/90	12/5/90	12.6.90	12/8/90

RMI TITANIUM COMPANY
SODIUM PLANT
RFI SUPPLEMENTAL WORKPLAN

SECTION TWO COMMENTS

Section 2.3.1, Page 2-2: As stated in the comments on the Draft RFI report, a 2-foot thick bentonite seal should be placed below the cement grout at each piezometer to better inhibit the potential for contaminants to migrate from the ground surface to the shallow groundwater through the annular space.

Section 2.3.3, Page 2-2: As stated in previous comments on the Draft RFI report, compressed air should not be used to develop the wells because the introduction of air to the aquifer may alter the chemical composition of the groundwater to a greater extent than other development methods.

Section 2.3.5, Page 2-3: Please indicate on Figure 2-1 where the two surface water samples would be collected from the eastern drainage ditch, if water is present. Also, please state (for purposes of clarification) whether groundwater and surface water samples for metals analysis will be filtered in the field ("dissolved" concentrations), unfiltered ("total" concentrations), or both.

The third sentence of section 2.3.5 states that all water samples will be analyzed for priority pollutant metals and cyanide. Although barium is not a priority pollutant, it is a hazardous constituent that is of concern at this facility. Therefore, state in this section that all water samples will be analyzed for barium.

In section 2.3.5, it is stated that four existing wells will be sampled in addition to the new wells. All existing shallow and deep wells should be sampled, with the exception of wells 1-S and 2-S, to present a more complete, up-to-date picture of groundwater quality across the entire facility. In addition, not all of the existing wells have been sampled for all of the priority pollutants. At least four of the constituents not sampled for previously are present in waste generated at the facility: copper, nickel, zinc, and cyanide.

Two sediment samples should be taken in the vicinity of SW-B to determine if past releases from area B may have affected sediment quality. These samples should be analyzed for the same constituents as the groundwater samples. In addition, sediment samples should be taken from at least two locations in the eastern drainage ditch where surface water sample collection will be attempted.

Section 2.4, Page 2-3: Please provide more detail on piezometer abandonment procedures, especially how the PVC screen and casing and grout collar will be removed, and whether the borehole will be tremie grouted as the auger is removed.

APPENDIX A COMMENTS
REVISED HEALTH AND SAFETY PLAN

[Note: The Health and Safety Plan must meet all applicable OSHA standards. The following comments are provided only as suggestions. The U.S. EPA will not approve or disapprove the Health and Safety Plan.]

Section 1.4, Page 1-2, Paragraph 1: Please clarify that at least two persons will be present when performing each of the field tasks listed in Table 1-1 (the "buddy system"). It is presently stated that at least two persons will be present "at the site".

Section 1.6, Page 1-4, Paragraph 1: Please include a definition for the "decontamination zone" in this section.

Table 3-1, Page 3-2: Please correct the PEL for lead to 0.05 mg/m^3 from the 0.15mg/m^3 that is listed to reflect the current level stated in 20 CFR 1910.1025. Please delete the word "fumes" from chlorine because chlorine is a gas. Also, the chlorine PEL of 1.5mg/m^3 is a time-weighted average, not a ceiling value. Therefore, the footnote "f" should be deleted from chlorine.

Table 3-2, Page 3-3: Under the activity "Well Installation", please list the prevention of hazard for weather-related exposure.

Section 3.4, Page 3-5: Chlorine is a concern at the site, and therefore, an HNu equipped with an 11.7 eV lamp should be used because the ionization potential of chlorine is 11.48 Ev. The action level should be initially lowered because the PEL for chlorine is 0.5ppm. If the HNu reads over 0.5 ppm above background for 5 minutes or longer, then a Draeger tube sample should be collected to determine whether chlorine is present. If chlorine is not detected, then the action level of 5ppm would take effect for the location. The Draeger tubes should be used because it is unclear how sensitive the HNu is to chlorine. (One could confirm HNu sensitivity by calibrating to chlorine).

Section 5.2, Page 5-1: Please see previous comment for Section 3.4, Page 3-5 on the initial action level for Level C based on the PEL for chlorine, and the use of both an 11.7 eV lamp for the HNu and Draeger tubes to detect chlorine.

Table 5-1, Page 5-2: Under "Level C", organic vapor/acid gas cartridges (color code yellow and magenta) will be necessary because of the possible presence of chlorine. Also, please see previous comment for Section 3.4, Page 3-5 on Level C initial action levels based on the PEL for chlorine, and the use of both an 11.7 eV lamp for the HNu and Draeger tubes to detect chlorine. Please add this additional information to the table.

Section 5.2, Page 5-3, Paragraph 3: Please clarify the relationship between the lower explosive limit (LEL) and the need for Level B protective equipment.

Section 7.1, Page 7-1, Paragraph 1: Please see previous comment on Section 3.4, Page 3-5 on Level C initial action levels based on the PEL for chlorine, and the use of both an 11.7 eV lamp for the HNu and Draeger tubes to detect chlorine.

MANAGEMENT OF INVESTIGATION-DERIVED WASTES

The Health and Safety Plan should be revised to include a section with a detailed discussion of plans for managing and disposing of wastes generated during the supplemental RFI field work, such as disposable protective clothing, purged groundwater, etc. This was originally requested by the U.S. EPA in the original RFI workplan approval conditions, dated March 30, 1988, but was never submitted.

November 2, 1990

Ms. Francine Norling
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604

Re: Review Comments, Supplemental RFI Work Plan
RMI Sodium
W.A. No.: TES X R05019

Dear Francine:

Enclosed are review comments on the Supplemental RFI Work Plan for the RMI Sodium facility in Ashtabula, Ohio.

If you have any questions about these comments please do not hesitate to call Rob Lowry at (614) 890-5501 or myself at (312) 427-8752.

Sincerely,

METCALF & EDDY, INC.

Thomas Lentzen

Thomas Lentzen
Regional Project Manager

Enclosure

cc: F. Norling
RPMO

U.S. ENVIRONMENTAL PROTECTION AGENCY

TECHNICAL ENFORCEMENT SUPPORT
AT
HAZARDOUS WASTE SITES

TES X

CONTRACT NO. 68-W9-0007
WORK ASSIGNMENT NO. R05019

REVIEW COMMENTS
SUPPLEMENTAL RFI WORK PLAN
RMI SODIUM
ASHTABULA, OHIO

U.S. EPA REGION V

METCALF & EDDY, INC.
PROJECT NO. 151019-0001-626

WORK PERFORMED BY:

METCALF & EDDY, INC.
2800 CORPORATE EXCHANGE DRIVE, SUITE 250
COLUMBUS, OHIO 43231

NOVEMBER 2, 1990

INTRODUCTION

Under the TES X Contract (68-W9-0007), Metcalf & Eddy, Inc. (M&E) has been tasked by the United States Environmental Protection Agency (U.S. EPA) Region V, to perform technical review of a RCRA Facility Investigation (RFI) report and a Draft Corrective Measures Study (CMS) prepared by RMI Sodium (RMI). According to information obtained from the U.S. EPA, the RMI Sodium plant is located in Ashtabula, Ohio. The facility produces sodium and chlorine by the electrolysis of sodium chloride.

RMI's production process generates three types of hazardous waste: cell bath waste contaminated with heavy metals; a reactive sodium/calcium sludge; and waste sulfuric acid. On March 31, 1987, the U.S. EPA issued RMI a final Resource Conservation and Recovery Act (RCRA) Part B permit for storage of cell bath waste in an enclosed waste pile, and for burning the reactive waste in an incinerator. The waste sulfuric acid is neutralized on-site in a RCRA-exempt treatment process.

On June 11, 1987, RMI submitted an RFI Work Plan as required by the Part B permit under Section 3004(u) of the Hazardous and Solid Waste Amendments of 1984 (HSWA). The permit required the facility to conduct an RFI to determine the nature and extent of releases of hazardous constituents from Solid Waste Management Units (SWMU's) at the RMI facility. An RFI was required because there had been a release of solvents to the groundwater around the closed landfill at the facility.

The U.S. EPA Region V approved the RFI Work Plan, with conditions, on March 30, 1988. RMI submitted the final RFI report to the U.S. EPA in May 1989. M&E submitted technical review comments on the RFI report to the U.S. EPA on February 6, 1990. On May 9, 1990, a meeting was held between the U.S. EPA, M&E, RMI Sodium, and their consultant (Eckenfelder, Inc.) to discuss each of the review comments. RMI Sodium submitted written responses to each comments to the U.S. EPA on June 11, 1990. The comments to these responses were submitted to the U.S. EPA on July 18, 1990. On July 13, 1990, M&E received a copy of RMI Sodium's revised RFI report and Draft CMS (partial submittal) with instructions from the U.S. EPA Work Assignment Manager (WAM), Ms. Francine Norling, to provide review comments on the RFI report and Section 1 of the Draft CMS. Additional field activities were proposed by RMI in the RFI report. M&E submitted review comments on these documents to the WAM on August 17, 1990. M&E accompanied the WAM on a site inspection of the facility on September 12, 1990. On October 19, 1990, M&E received a copy of RMI Sodium's Supplemental RFI Work Plan from the WAM for review. The Supplemental Work Plan incorporates the recommendations for additional field activities outlined in the RFI report and reflects discussions during the site inspection of September 12, 1990. The

following review comments are specific to the Supplemental RFI Work Plan. Please note that the comments are listed in the same order and numbered the same as the responses encountered in the text. Sections or subsections for which there are no comments are not listed.

SECTION TWO COMMENTS

Section 2.3.1, Page 2-2: As stated in comments on the Draft RFI report, a two-foot thick bentonite seal should be placed below the cement grout at each piezometer to better inhibit the potential for possible contaminants to more easily migrate from the ground surface to the shallow groundwater through the annular space.

Section 2.3.3, Page 2-2: As stated in previous comments on the Draft RFI report, compressed air should not be used to develop the wells because the introduction of air to the aquifer may alter the chemical composition of the groundwater more so than other development methods.

Section 2.3.5, Page 2-3: Please indicate on Figure 2-1 where the two surface water samples would be collected from the eastern drainage ditch, if water is present. Also, please state (for purposes of clarification) whether groundwater and surface water samples for metals analysis will be filtered in the field ("dissolved" concentrations), unfiltered ("total" concentrations), or both.

Section 2.4, Page 2-3: Please provide more detail on piezometer abandonment procedures, especially how the PVC screen and casing and grout collar will be removed and whether the borehole will be tremie grouted as the auger is removed.

APPENDIX A COMMENTS
REVISED HEALTH AND SAFETY PLAN

Section 1.4, Page 1-2, Paragraph 1: Pleas clarify that at least two persons will be present when performing each of the field tasks listed in Table 1-1 (the "buddy system"). It is presently stated that at least two persons will be present "at the site".

Section 1.6, Page 1-4, Paragraph 1: Please include a definition for the "decontamination zone" in this section.

Table 3-1, Page 3-2: Please correct the PEL for lead to 0.05 mg/m^3 from the 0.15 mg/m^3 that is listed to reflect the current level stated in 29 CFR 1910.1025. Please delete the word "fumes" from chlorine because chlorine is a gas. Also, the chlorine PEL of 1.5 mg/m^3 is a time weighted average, not a ceiling value. Therefore, the footnote "f" should be deleted from chlorine.

Table 3-2, Page 3-3: Under the activity "Well Installation", please list the prevention of hazard for weather related exposure.

Section 3.4, Page 3-5: Because chlorine is a concern at the site, an HNu equipped with an 11.7 eV lamp should be used because the ionization potential of chlorine is 11.48 eV. The action level should be initially lowered because the PEL for chlorine is 0.5 ppm. If the HNu reads over 0.5 ppm above background for 5 minutes or longer, then a Draeger tube sample should be collected to determine whether chlorine is present. If chlorine is not detected, then the action level of 5 ppm would take effect for the location. The Draeger tubes should be used because it is unclear how sensitive the HNu is to chlorine (could confirm HNu sensitivity by calibrating to chlorine).

Section 5.2, Page 5-1: Please see previous comment for Section 3.4, Page 3-5 on the initial action level for Level C based on the PEL for chlorine, and the use of both an 11.7 eV lamp for the HNu and Draeger tubes to detect chlorine.

Table 5-1, Page 5-2: Under "Level C", organic vapor/acid gas cartridges (color code yellow and magenta) will be necessary because of the possible presence of chlorine. Also, please see previous comment for Section 3.4, Page 3-5 on Level C initial action levels based on the PEL for chlorine, and the use of both an 11.7 eV lamp for the HNu and Draeger tubes to detect chlorine. Please add this additional information to the table.

Section 5.2, Page 5-3, Paragraph 3: Please clarify the relationship between the lower explosive limit (LEL) and the need for Level B protective equipment.

Section 7.1, Page 7-1, Paragraph 1: Please see previous comment on Section 3.4, Page 3-5 on Level C initial action levels based on the PEL for chlorine, and the use of both an 11.7 eV lamp for the HNu and Draeger tubes to detect chlorine.

Metcalf & Eddy

July 18, 1990

Ms. Francine Norling
U.S. EPA, Region V
230 South Dearborn
Chicago, Illinois 60604

RE: Comments on Responses to U.S. EPA Review Comments,
RMI Sodium RFI Report
Work Assignment No. R05019

Dear Francine:

Enclosed are comments on responses by RMI Sodium to U.S. EPA review comments on the RFI Report for their facility in Ashtabula, Ohio.

If you have any questions about these comments, please call me anytime at (614) 890-5501.

Sincerely,

Rob Lowry

Rob Lowry
Contractor Project Manager

RL/kaw

cc: T. Lentzen - TES X
Files

2800 Corporate Exchange Drive, Suite 250, Columbus, OH 43231
Telephone: 614 890-5501 — FAX: 614 890-7421

AWT Affiliates of Air & Water Technologies Corporation

ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ENFORCEMENT SUPPORT
AT
HAZARDOUS WASTE SITES

TES X

CONTRACT NO. 68-01-7351
WORK ASSIGNMENT NO. R05019

COMMENTS ON RESPONSES TO U.S. EPA REVIEW COMMENTS DRAFT RFI REPORT RMI SODIUM ASHTABULA, OHIO

U.S. EPA REGION V

METCALF & EDDY, INC.
PROJECT NO. 150019-0001-626

WORK PERFORMED BY:

METCALF & EDDY, INC.
2800 CORPORATE EXCHANGE DRIVE
SUITE 250
COLUMBUS, OHIO 43231

JULY 18, 1990

INTRODUCTION

Under the TES X Contract (68-W9-0007), Metcalf & Eddy, Inc. (M&E) has been tasked by the United States Environmental Protection Agency (U.S. EPA) Region V, to perform technical review of a RCRA Facility Investigation (RFI) report prepared by RMI Sodium (RMI). According to information obtained from the U.S. EPA, the RMI Sodium plant is located in Ashtabula, Ohio. The facility produces sodium and chlorine by the electrolysis of sodium chloride.

RMI's production process generates three types of hazardous waste: cell bath waste contaminated with heavy metals; a reactive sodium/calcium sludge; and waste sulfuric acid. On March 31, 1987, the U.S. EPA issued RMI a final Resource Conservation and Recovery Act (RCRA) Part B permit for storage of cell bath waste in an enclosed waste pile, and for burning the reactive waste in an incinerator. The waste sulfuric acid is neutralized on-site in a RCRA-exempt treatment process.

On June 11, 1987, RMI submitted an RFI Work Plan as required by the Part B permit under Section 3004(u) of the Hazardous and Solid Waste Amendments of 1984 (HSWA). The permit required the facility to conduct an RFI to determine the nature and extent of releases of hazardous constituents from Solid Waste Management Units (SWMU's) at the RMI facility. An RFI was required because there had been a release of solvents to the groundwater around the closed landfill at the facility.

The U.S. EPA Region V approved the RFI Work Plan, with conditions, on March 30, 1988. RMI submitted the final RFI report to the U.S. EPA in May 1989. M&E submitted technical review comments on the RFI report to the U.S. EPA on February 6, 1990. On May 9, 1990, a meeting was held between the U.S. EPA, M&E, RMI Sodium, and their consultant (Eckenfelder, Inc.) to discuss each of the review comments. RMI Sodium submitted written responses to each comments to the U.S. EPA on June 11, 1990. The U.S. EPA Work Assignment Manager (WAM), Ms. Francine Norling, instructed Mr. Rob Lowry, M&E Contractor Project Manager (CPM), to provide comments on RMI Sodium's responses as detailed on their June 11th document. The following review comments are specific to the June 11th document. Please note that the comments are listed in the same order and numbered the same as the responses encountered in the text. Sections, subsections, or responses for which there are no comments are not listed and are left blank.

EXECUTIVE SUMMARY COMMENTS

2. **Executive Summary, Page ES-5, Paragraph 1:** Please provide documentation to support the response that potential exposure to constituents present in the SWMU's to on-site employees is not within the scope of the RFI and that its consideration is not consistent with current federal guidelines.

3. **Executive Summary, Page ES-5, Paragraph 3:** Please list a reference or provide a range of barium concentrations that may be "typical" for groundwater in shale bedrock at the depths encountered in the vicinity of the site. This information would allow a better evaluation of the conclusion that the "deep" groundwater at the site is chemically different from the "shallow" groundwater and that the "deep" groundwater has not been impacted from site activities.

7. **Executive Summary, Page ES-7, Paragraph 2:** Please see comment for response #2.

12. **Executive Summary, Page ES-9, Paragraph 1:** Please list a reference or provide documentation for the statement that is not believed that the warm water habitat designation is appropriate for the DS Tributary because it is doubtful that the waters are capable of supporting any but the most tolerant species of aquatic biota. The DS Tributary may be capable of supporting higher species of aquatic biota even though no aquatic biota were observed in it during the RFI.

14b. **Executive Summary, Page ES-10, Paragraph 1:** Please see comment for response #37 on ditch sediment sampling.

SECTION THREE COMMENTS

21. **Section 3.4, Page 3-4, Paragraph 3:** In hindsight, it would have been more appropriate to submit a soil sample for VOC's, BNA's, and pesticide/PCB's analysis from either the 10 to 20 foot or 20 to 25 foot interval from well RMI-2S. HNu readings from these intervals were 150 ppm and 130 ppm, respectively, whereas the HNu reading from the interval submitted for analysis (6 feet) was 11 ppm.

37. **Section 3.9, Page 3-15, Paragraph 2:** Although the response states that the collection of sediment samples from on-site drainage ditches is unnecessary because the potential for erosion/runoff of constituents from site surficial soils and the evaluation of the need to remediate certain site areas will be further addressed during the CMS report, the collection and analysis of ditch sediment samples may still be necessary to document the possible quantity of site related sediment released to the ditch. If the sediment released to the ditch is of sufficient quantity and contains elevated concentrations of site related contaminants, it may be appropriate to address the potential remediation of sediment in the ditch because transport of contaminated sediment downstream to Fields Brook and/or the Cuyahoga River may occur during high flow events. The response seems to indicate that only remediation of certain site areas will be addressed during the CMS to prohibit the future release of sediment from the site. However, the CMS should also address the remediation of contaminants that already have been released to the ditch.

SECTION FOUR COMMENTS

54. **Section 4.6.2.1, Page 4-67, Paragraph 3:** The reference for products produced by the Detrex facility, "(USEPA, 1985)", should be at the end of each sentence in which the information is given.

SECTION FIVE COMMENTS

62. **Section 5.2.3, Page 5-11, Paragraph 1:** The response states that the abandoned pond east of the closed landfill, and the east and west brine ponds were mistakenly identified as SWMU's and that these units have only contained leach brine, not hazardous or solid waste material. Therefore, it is concluded that these units should not be classified as "areas of concern." However, there units could be classified as "areas of concern" because the leach brine likely contained elevated concentrations of some metals that may have been released to the shallow groundwater. A unit can also contain liquid material in addition to known hazardous or solid waste material for classification as an SWMU or area of concern.

SECTION SIX COMMENTS

73. **Section 6.1.2, Page 6-7, Paragraph 2:** Please see comment for response #3 on barium concentrations that may naturally occur in the "deep" bedrock groundwater.

76. **Section 6.2.2, Page 6-14, Paragraph 2:** Please see comment for response #21.

81. **Section 6.4, Page 6-27, Paragraph 2:** Please see comment for response #2.

98. **Section 6.7.2, Page 6-38, Paragraph 1:** Please see comment for response #37 on ditch sediment sampling.

102. **Section 6.7, General Comment:** Please see comment for response #2 on addressing potential exposure to on-site workers from dust inhalation.

SECTION SEVEN COMMENTS

104. **Section 7.0, General Comment:** Please see comments for both response #37 on ditch sediment sampling and response #12 on possible aquatic biota in the DS Tributary.

105. **Section 7.0, General Comment:** Please see comment for response #2 on addressing potential soil related exposures to on-site employees.

106. **Section 7.0, General Comment.** Please see comments for response #2 on evaluating soil-related dermal contact/inhalation exposure by humans, response #37 on ditch sediment sampling, and response #12 on possible aquatic biota in the DS Tributary.

110. **Section 7.1.1, Page 7-3, Paragraph 1:** Please see comment for response #3 on barium concentrations in the "deep" groundwater.

122. **Section 7.2.2.2, Page 7-32, Paragraph 2:** Please see comment for response #37 on the possible collection of ditch sediment samples.

124. **Section 7.2.2.2, Page 7-37, Paragraph 3:** Please see comment for response #2 on potential exposures to on-site employees.

127. **Section 7.2.2.2, Page 7-47, Paragraph 2:** Please see comment for response #2 on potential exposures to on-site employees.

128. **Section 7.2.3, Page 7-48, Paragraph 1:** Please see comment for response #2 on potential exposure to on-site employees.

129. **Section 7.2.4, Page 7-49, Paragraph 1:** Please see comment for response #2 on potential exposure to on-site employees.

132. **Section 7.3.1.2, Page 7-57, Paragraph 1:** Additional work was <u>not</u> evaluated or recommended for the area north of the site in either the RFI report (Page ES-10) or Attachment 1 to the response, contrary to what is stated in this response. Work was recommended for the area east of the site only. The potential for additional work in the area north of the site should be further evaluated.

133. **Section 7.3.1.2, Page 7-57, Paragraph 2:** Please see comment for response #37 on ditch sediment sampling.

136. **Section 7.3.2.1, Page 7-64, Paragraph 1:** Please see comment for response #132 on additional work in the area north of the plant.

140. **Section 7.3.5, Page 7-81, Pargraph 3:** Please see comments for both response #37 on ditch sediment sampling and response #12 on possible aquatic biota in the DS Tributary.

142. **Section 7.4, Page 7-82, Paragraph 1:** Please see comment for response #2 on potential exposures to on-site employees.

RMI TITANIUM Company

P. O. BOX 269
1000 WARREN AVENUE
NILES, OHIO 44446
FAX 216/544-7796

June 28, 1990

Ms. Francine Norling
RCRA Activities
U. S. EPA, Region V
230 South Dearborn Street
Chicago, Illinois 60690-3587

Attention: 5HR-13

Re: RCRA Facility Investigation Report
RMI - Sodium Plant
OHD 000 810 242

Dear Ms. Norling:

Enclosed are three copies of the revised RCRA Facility Investigation Report (RFI) for the RMI Sodium Plant prepared by Eckenfelder, Inc. As we agreed in our 9 May meeting, based on the U. S. EPA comments, in this case revising the RFI would provide a clearer and more convenient record than simply issuing an addendum to the original RFI. As we anticipated in the meeting, Eckenfelder was able to complete the revision expeditiously to avoid any delay of the ongoing project.

As always, please do not hesitate to contact me with any questions (216) 544-7688.

Sincerely

R. L. Mason
Director
Environmental Affairs

Enclosures

JUN 12 1990

5HR-13

Richard L. Mason, Director
Environmental Affairs
RMI Company
P.O. Box 269
1000 Warren Avenue
Niles, Ohio 44446

RE: RCRA Facility Investigation (RFI)
RMI Sodium Plant
OHD 000 810 242

Dear Mr. Mason:

At our meeting of May 9, 1990, I agreed to reevaluate certain of the action levels listed in my letter to you of April 4, 1990. I have completed this evaluation for the four topics under discussion: 1) error in units (ppb vs ppm), 2) consideration of statistics for surficial soil data, 3) clarification on evaluation of deep soils data and 4) explanation of the derivation of the surface water action level.

1. Error in units. For cadmium in shallow soils, the measured and action levels should be ppm not ppb.

2. Statistics for shallow soils.

Eckenfelder cautions that the application of the statistical evaluation can be influenced by a large sample variance which can "wash out" an apparently large difference in means. This appears to have happened in area C for lead, and therefore, I am considering the 80.7 ppm measured level as significantly above background even though the probability value is greater than 0.05. However, area G exhibits a smaller sample variance, and therefore, I accept the conclusion that the measured lead level at this area is not significantly above background. This argument also holds for eliminating the area A arsenic measured level (14.6 ppm) as not significantly exceeding the action level (12.0 ppm). 3.) Eckenfelder correctly pointed out that a listing of data classified by RMI as "deep soils" was missing from the April 4, 1990, letter. The current United States Environmental Protection Agency (U.S. EPA) RCRA policy regarding subsurface soils is to employ the direct contact scenario (ingestion) for soils in the near subsurface (generally 2-3 feet), and then to evaluate contamination in the lower subsurface in terms of potential transfer to groundwater.

Therefore, the action levels developed for the ingestion scenario (or background in the absence of such criteria) apply to the near subsurface soils. The RFI data exceeding action levels are as follows:

Media	Constituents	Location	Measured Level	Action Level
Subsurface soils	Cadium	Area G (0.5 -3.3ft)	85.2ppm	40ppm
	Lead	Area G (0.5 -3.3ft)	189.9ppm	29.9ppm
		Area D	37.4ppm	29.9ppm

No action levels exist to judge the potential for groundwater contamination for deep subsurface soils. Eckenfelder presents such an evaluation in Chapter 7 of the RFI report using literature values for Kd (soil/water partition coefficient). The U.S. EPA Robert S. Kerr Laboratories, experts in soil contamination evaluation and remediation, recommended that Kd values must be measured at each site, rather than relying on literature values. We may need to further discuss evaluation of the deep soils data.

4) Discussion of surface water action level (9.5 ppb for cadmium)

The action levels for surface water were calculated, based on instructions in the Ohio Water Quality Standards, Ohio Administrative Code (OAC) 3745-1-07, effective May 1, 1990. The use designation for the Fieldsbrook tributary listed in Ohio Water Quality Standard 3745-1-14 was applied to the tributary. The equation in Table 7-11 of OAC 3745-1-07 was used to calculate the action levels. The hardness values were calculated from calcium and magnesium levels measured on February 3, 1989, at RMI, and listed in Appendix 9 as "DW" samples. The equation used for hardness is the equation listed in Standard Methods (AWWA, 1989): Hardness = 2.497 [Ca, mg/l] + 4.118 [Mg, mg/l].

If you have any additional questions, please contact me at (312) 886-6198.

Sincerely,

Francine Norling
Environmental Scientist

cc: Ed Lim, OEPA-CO

RCRA PERMITS	TYP.	AUTH.	IL. CHIEF	IN. CHIEF	MI. CHIEF	MN/WI CHIEF	OH. CHIEF	RPB CHIEF	O.R. A.D.D.	WMD DIR
INIT. DATE	06/12/90	6/12/90								

ECKENFELDER INC.

June 28, 1990 6120

Mr. Richard L. Mason
Director, Environmental Affairs
RMI Titanium Company
1000 Warren Avenue
Niles, OH 44446

Dear Rick:

Enclosed please find six copies of the revised RCRA Facility Investigation (RFI) Report for the RMI Sodium Plant. The revised report incorporates changes in response to comments issued by the USEPA on April 4, 1990. As agreed in the May 9, 1990 meeting with the USEPA, the revised RFI no longer includes the Health and Environmental Assessment (previously Section 7.0 of the draft RFI) which is concurrently being submitted as part of the CMS Scope of Work.

ECKENFELDER INC. has appreciated this opportunity to further serve RMI. Please let us know if we can be of any further assistance.

Sincerely,

ECKENFELDER INC.

Jeffrey L. Pintenich, P.E., CHMM
Vice President
Director, Waste Management Division

William M. Liebe
Senior Hydrogeologist

Mary D. Bryan
Environmental Scientist

Enclosures

227 French Landing Drive
Nashville, Tennessee 37228
615.255.2288
FAX 615.256.8332

II790-39

JUL 10 1990

5HR-13

Mr. Rob Lowry
Contractor Project Manager
Metcalf & Eddy
2800 Corporate Exchange Drive
Suite 250
Columbus, Ohio 43231

RE: RMI Sodium
RFI Work Assignment
Number R 05019

Dear Mr. Lowry:

I have enclosed a copy of RMI Sodium's revised RCRA Facility Investigation (RFI) report, and the draft Corrective Measures Study (CMS) (partial submittal). The RFI report should have been revised in accordance with the report titled "Responses to the U.S. EPA's Comments of April 4, 1990 on the RFI report", dated June 11, 1990. I am requesting a review and written comments on the revised RFI report for conformance with the June 11 report, as well as with the agreements that we reached at our May 9, 1990, meeting.

In addition, I am requesting a review and written comments on Section 1 of the draft CMS for technical accuracy. I plan to have the United States Environmental Protection Agency staff review Sections 2 & 3. However, if your assistance is needed on those sections, I will let you know.

This request is made in accordance with TES Work Assignment No. R 05019, as revised on March 29, 1990, Task 3.0. According to the workplan, the comments are due 30 days from the date of this letter. However, if a different review time is needed, please let me know.

If you have any questions, please contact me at (312) 886-6198.

Sincerely,

Francine P. Norling
Environmental Scientist

Enclosures

cc: Tom Lentzen, Metcalf & Eddy, TES X
Fred Norling, U.S. EPA

II1690-53

JUN 14 1990

5HR-13

Rob Lowry
Contractor Project Manager
Metcalf and Eddy
2800 Corporate Exchange Drive, Suite 250
Columbus, Ohio 43231

RE: RMI Sodium
RFI Work Assignment
Number R05019

Dear Mr. Lowry:

I have enclosed a copy of RMI Sodium's response to the U.S. EPA's comments of April 4, 1990, on the facility's RFI report. In accord with the TES work assignment No. R05019, as revised on March 29, 1990, Task 3.0, I am requesting a review and written comments on sections of the enclosed document titled "Enclosure I Comments", and "Attachments". I will review the section titled "Enclosure II Comments." According to the workplan, these comments are due 30 days from the date of this letter. However, if you are able to accommodate a three week review time, I would appreciate it.

If you have any questions, please contact me at (312) 886-6198.

Sincerely,

Francine P. Norling
Environmental Scientist

Enclosure

cc: Tom Lentzen, Metcalf & Eddy, TES X
Fred Norling, U.S. EPA

RMI TITANIUM Company

P. O. BOX 269
1000 WARREN AVENUE
NILES. OHIO 44446
FAX 216/544-7796

June 28, 1990

Ms. Francine Norling
RCRA Activities
U. S. EPA, Region V
230 South Dearborn Street
Chicago, Illinois 60690-3587

Re: Corrective Measures Study
RMI - Sodium Plant
OHD 000 810 242

Dear Ms. Norling:

Enclosed are three copies of the draft Corrective Measures Study (CMS), Task IA, and plans for Task IB as outlined in the scope of work in Karl Bremer's 4 April letter.

As we have discussed, RMI feels strongly that action levels should be distinguished from cleanup standards. Action levels are useful to trigger a CMS by indicating the potential for a threat to health or environment, but site specific cleanup standards, which at some sites may be very different from action levels, need to be developed later in the corrective action process.

We look forward to discussing the CMS with you soon. Please call with any questions (216) 544-7688.

Sincerely,

R. L. Mason
Director
Environmental Affairs

Enclosures

cc: Ohio EPA
Division of Solid and Hazardous
Waste Management
1800 WaterMark Drive
Columbus, Ohio 43266-0149

JUN 12 1990

5HR-13

Richard L. Mason, Director
Environmental Affairs
RMI Company
P.O. Box 269
1000 Warren Avenue
Niles, Ohio 44446

RE: RCRA Facility Investigation (RFI)
RMI Sodium Plant
OHD 000 810 242

Dear Mr. Mason:

At our meeting of May 9, 1990, I agreed to reevaluate certain of the action levels listed in my letter to you of April 4, 1990. I have completed this evaluation for the four topics under discussion: 1) error in units (ppb vs ppm), 2) consideration of statistics for surficial soil data, 3) clarification on evaluation of deep soils data and 4) explanation of the derivation of the surface water action level.

1. Error in units. For cadmium in shallow soils, the measured and action levels should be ppm not ppb.

2. Statistics for shallow soils.

Eckenfelder cautions that the application of the statistical evaluation can be influenced by a large sample variance which can "wash out" an apparently large difference in means. This appears to have happened in area C for lead, and therefore, I am considering the 80.7 ppm measured level as significantly above background even though the probability value is greater than 0.05. However, area G exhibits a smaller sample variance, and therefore, I accept the conclusion that the measured lead level at this area is not significantly above background. This argument also holds for eliminating the area A arsenic measured level (14.6 ppm) as not significantly exceeding the action level (12.0 ppm). 3.) Eckenfelder correctly pointed out that a listing of data classified by RMI as "deep soils" was missing from the April 4, 1990, letter. The current United States Environmental Protection Agency (U.S. EPA) RCRA policy regarding subsurface soils is to employ the direct contact scenario (ingestion) for soils in the near subsurface (generally 2-3 feet), and then to evaluate contamination in the lower subsurface in terms of potential transfer to groundwater.

Therefore, the action levels developed for the ingestion scenario (or background in the absence of such criteria) apply to the near subsurface soils. The RFI data exceeding action levels are as follows:

Media	Constituents	Location	Measured Level	Action Level
Subsurface soils	Cadium	Area G (0.5 -3.3ft)	85.2ppm	40ppm
	Lead	Area G (0.5 -3.3ft)	189.9ppm	29.9ppm
		Area D	37.4ppm	29.9ppm

No action levels exist to judge the potential for groundwater contamination for deep subsurface soils. Eckenfelder presents such an evaluation in Chapter 7 of the RFI report using literature values for Kd (soil/water partition coefficient). The U.S. EPA Robert S. Kerr Laboratories, experts in soil contamination evaluation and remediation, recommended that Kd values must be measured at each site, rather than relying on literature values. We may need to further discuss evaluation of the deep soils data.

4) Discussion of surface water action level (9.5 ppb for cadmium)

The action levels for surface water were calculated, based on instructions in the Ohio Water Quality Standards, Ohio Administrative Code (OAC) 3745-1-07, effective May 1, 1990. The use designation for the Fieldsbrook tributary listed in Ohio Water Quality Standard 3745-1-14 was applied to the tributary. The equation in Table 7-11 of OAC 3745-1-07 was used to calculate the action levels. The hardness values were calculated from calcium and magnesium levels measured on February 3, 1989, at RMI, and listed in Appendix 9 as "DW" samples. The equation used for hardness is the equation listed in Standard Methods (AWWA, 1989): Hardness = 2.497 [Ca, mg/l] + 4.118 [Mg, mg/l].

If you have any additional questions, please contact me at (312) 886-6198.

Sincerely,

Francine Norling
Environmental Scientist

cc: Ed Lim, OEPA-CO

RCRA PERMITS	TYP.	AUTH.	IL. CHIEF	IN. CHIEF	MI. CHIEF	MN/WI CHIEF	OH. CHIEF	RPB CHIEF	O.R. A.D.D.	WMD DIR
INIT. DATE	06/12/90	6/12/90								

RMI TITANIUM

RMI Company

P. O. BOX 269
1000 WARREN AVENUE
NILES, OHIO 44446

June 11, 1990

Ms. Francine Norling
RCRA Activities
U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago, Illinois 60604

Dear Ms. Norling:

Enclosed are the responses to comments issued by the USEPA on April 4, 1990 regarding the RCRA Facility Investigation (RFI) Report for the RMI Sodium Plant.

On May 9, 1990, a meeting held in the USEPA's RCRA branch office in Chicago was attended by Ms. Francine Norling (USEPA); Mr. Robert M. Lowry (Metcalf & Eddy); Mr. Richard L. Mason and Mr. Michael C. Miller (RMI Company); Mr. Jeffrey L. Pintenich, Ms. Laura M. Hodges, Mr. William L. Liebe, and Ms. Mary D. Bryan (ECKENFELDER INC.). The comments issued by the USEPA were discussed and several technical issues were resolved as follows:

- The organics which are present in environmental media at the RMI Sodium Plant site are the result of the migration of organic constituents from off site sources, not as a result of activities at the RMI Sodium Plant.

Not sure

- It was acknowledged that the barium concentrations measured in the bedrock groundwater zone at the project site are not a result of activities at the RMI Sodium Plant and are probably naturally occurring.

- It was agreed that a Corrective Measures Study (CMS) report would be prepared for the RMI Sodium Plant to address areas and media at the site which have been identified in the RFI report as being of potential concern.

- It was stressed that action levels assigned to environmental media at the site are to be used only to determine whether or not a CMS needs to be conducted. These action levels will not, therefore, automatically set a precedence for clean up levels at the site, and clean up levels are relevant only to the evaluation of remedial alternatives during the CMS.

It was also agreed during this meeting (and subsequently confirmed by a letter from the USEPA to RMI Company dated May 18, 1990) that responses to the USEPA's comments would be submitted by June 12, 1990 and would include a discussion of additional work proposed for the site and surface water and sediment sample descriptions which were previously inadvertently omitted from Appendix 3 of the RFI report. The responses to USEPA's comments are enclosed herein as well as a description of recommended additional work (Attachment 1) and surface water sample descriptions (Attachment 2).

In addition, it was determined that completion of Task I.A. of the CMS Scope of Work, and a plan for completing Task I.B. are due on June 29, 1990. As discussed during the meeting, the revised Health and Environmental Assessment (currently Section 7.0 of the RFI report) will also be included in the June 29 submittal as part of the CMS Scope of Work and will no longer be included in the RFI report. Sections 1 through 6 of the RFI report will be revised per the enclosed comments and responses and submitted by June 29, 1990 as a revised RFI report. A CMS report, however, will not be prepared until results of the supplemental investigation described in Attachment 1 of this submittal are received and approved by the USEPA.

Sincerely,

Richard L. Mason
Director
Environmental Affairs

Enclosure

cc: Ohio EPA, Division of Solid and Hazardous Waste Management
Jeffrey L. Pintenich, P.E., CHMM (ECKENFELDER INC.)

RESPONSES TO THE US ENVIRONMENTAL PROTECTION AGENCY'S COMMENTS OF APRIL 4, 1990 ON THE "RCRA FACILITY INVESTIGATION REPORT, RMI SODIUM PLANT, ASHTABULA, OHIO"

Prepared for:

RMI COMPANY
Niles, Ohio

Prepared by:

ECKENFELDER INC.
227 French Landing Drive
Nashville, Tennessee 37228

June 11, 1990

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